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B8T TWE TWP

(56) Documents Cited  
FR 002631619 A1 US 5425471 A  
US 5397023 A US 5335812 A

(58) Field of Search  
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INT CL<sup>7</sup> B65D, B67B  
Other: ONLINE: EPODOC, JAPIO, WPI

(54) Abstract Title  
**Snap-fit cap with puncturable portion**

(57) The invention provides in combination a drink container (10) sealed by a snap-fit cap (11) of a thin, resilient and flexible plastics material, a drinking straw (Fig. 2, 13) and a punch (12) having a constant diameter portion (14) tapering at its distal end to a point, the diameter of said portion (14) of the punch being only slightly greater than the diameter of the straw (Fig 2, 13) and the arrangement being such that after making a hole (15) in the cap (11) utilising the punch (12) the straw (Fig. 2, 13) may be inserted in the hole (15) and the material of the cap (11) deflected by the punch (12) will form a seal around the straw (Fig 2, 13).

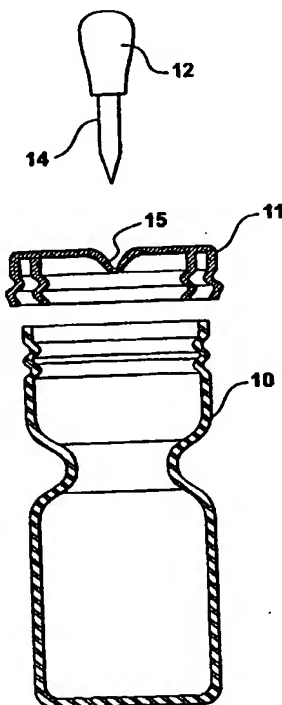
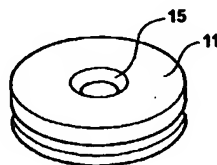


FIG. 1

FIG. 3



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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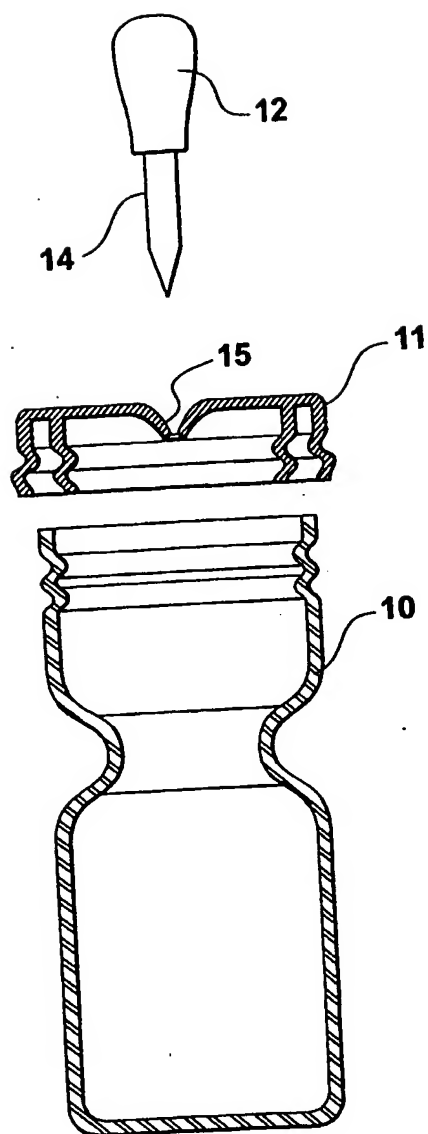


FIG. 1

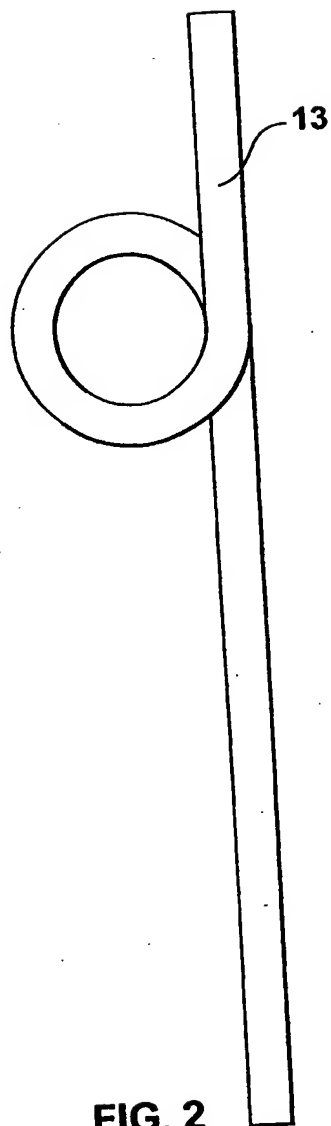


FIG. 2

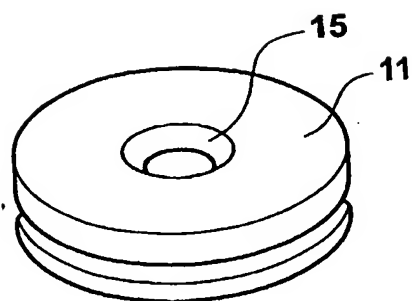


FIG. 3

**"DRINKS KIT"**

This invention relates to a drinks kit, and more particularly to a kit which will enable to user to insert a drinking straw or tube into a drinks container in such a way as to create a seal which will prevent spillage.

Certain soft drinks are provided in containers or bottles which have a snap-fit cap or lid of a relatively thin, resilient and flexible plastics material. The intention of the manufacturer is that the cap should be pulled off and the contents poured into a glass or other drinking vessel. However such drinking vessels are not always available, for example when travelling, and in any event children, especially, have a preference to drink straight from the bottle. Spillage is an ever present danger even if a drinking straw or tube is used. To leave the cap *in situ* and make a hole in it for the straw or tube to pass through is no solution if the hole is bigger than the diameter of the straw.

The present invention solves this problem by providing purchasers of such soft drink containers with a kit consisting of a punch and a drinking tube, the punch being of only slightly larger diameter than the tube. As the punch penetrates the cap it deflects the material of the cap inwardly of the container to form a resilient flange surrounding the hole. When the punch is withdrawn and the drinking tube inserted in its place this flange will form a seal around the tube to prevent any leakage of the contents of the container through the hole around the tube.

A preferred embodiment of the present invention will now be described by way of non-limitative example with reference to the accompanying drawings, in which:

Figure 1 illustrates in sectional elevation a soft drinks container with a snap-fit cap and a punch held above the cap;

Figure 2 illustrates a drinking tube, and

Figure 3 is a perspective view of the cap of Figure 1.

A plastics container or bottle 10 for a soft drink is provided with a snap-fit cap or lid 11 of a relatively thin, flexible and resilient plastics material. The cap 11 can simply be stripped off the neck of the bottle 10 to gain access to the contents of the bottle, but to avoid the possibility

of spillage, particularly if an infant is to drink from the bottle, the present invention provides the combination of the punch 12 and the drinking tube 13. Beneath its handle portion the punch 12 has a constant diameter portion 14 tapering at its distal end to a point. The diameter of the portion 14 of the punch is only slightly greater than the external diameter of the tube 13. An example of this difference in diameter is 1 mm when the tube has an external diameter of approximately 5 mm and the portion 14 6 mm.

When the cap 11 is stabbed with the punch 12 the pointed end of the punch forms a hole which widens as the taper penetrates. The material of the cap 11 is deflected downward as the punch enters to form an annular flange 15 around the portion 14 of the punch. When the punch is withdrawn the material of the cap 11 will tend to restore itself but it is sufficiently weakened at the hole to allow one end of the drinking tube 13 to be pushed in in place of the punch. The tube 13 will again deflect the material of the cap to reform the flange 15 which, because of its resilience, will form a seal against the tube 13 preventing spillage of the contents of the bottle 10.

The drinking tube 13 is a commercially available item extruded from a plastics material to have a pleasing shape. Evidently, however, a conventional, straight drinking straw or tube could be used if its external diameter is roughly the same.

## CLAIMS:

1. In combination a drink container sealed by a snap-fit cap of a thin, resilient and flexible plastics material, a drinking straw and a punch having a constant diameter portion tapering at its distal end to a point, the diameter of said portion of the punch being only slightly greater than the diameter of the straw and the arrangement being such that after making a hole in the cap utilising the punch the straw may be inserted in the hole and the material of the cap deflected by the punch will form a seal around the straw.
2. The combination of claim 1, wherein the difference in diameter between said portion of the punch and the straw is approximately 1 mm.
3. In combination a drink container sealed by a snap-fit cap of a thin, resilient and flexible plastics material, a drinking straw and a punch having a constant diameter portion tapering at its distal end to a point substantially as hereinbefore described with reference to and as shown in the accompanying drawings.



Application No: GB 0206318.8  
Claims searched: 1-3

Examiner: Darren Williams  
Date of search: 22 August 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
Y	1, 2	US 5425471 (WENDT) see whole document, especially fig 2, (snap-fit cap having puncturable portion)
Y	1, 2	US 5397023 (TOCZEK) see whole document, (snap-fit cap having puncturable portion)
Y	1, 2	US 5335812 (BOLLER) see whole document, (snap-fit cap having puncturable portion)
Y	1, 2	FR 2631619 A1 (JOLLY) see punch 8, fig 2

### Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>v</sup>:

B8T

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

B65D, B67B

The following online and other databases have been used in the preparation of this search report:

EPODOC, JAPIO, WPI